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(72) Inventor: STAVAR, Iordan [RO/RO]; Calea Giulesti nr., 44-7-c-4, ap. 87, R-77793 Bucuresti (RO).

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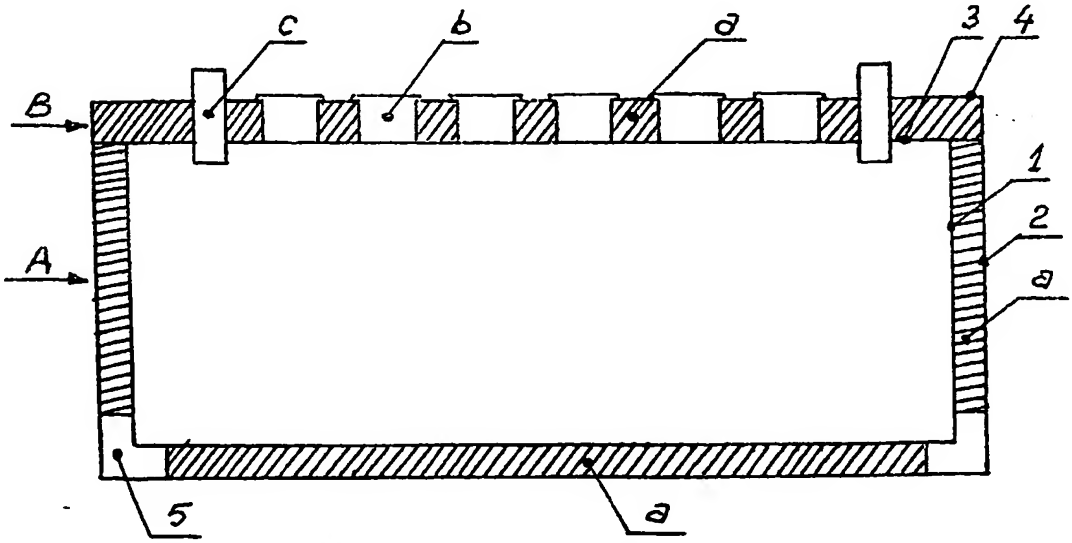
(54) Title: BOX FOR AUTOMOBILE ACCUMULATORS



(57) Abstract: The invention is about a box for automobile accumulator batteries that function in the surroundings at extreme temperatures, ranging from -30 °C to +90 °C. According to this invention, the box consists of two frameworks (1, 2), one superposed upon the other, between which there is a space (a) filled with a thermo-insulating layer made of polyurethane foam. Made up of two plane elements (3, 4), between which the polyurethane foam is introduced, the lid (B) has several holes (b) in which filler caps are screwed up (6). The invention proves useful due to the following advantages: it eliminates the thermal shocks of the automobile accumulators - the thermal shocks of which significantly reduce their safety during exploitation; it eliminates the frequent recharging during the wintertime; it gives easiness of exploitation.

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BOX FOR AUTOMOBILE ACCUMULATORS

The invention is used by the accumulator-manufacturing industry, in the production of electric generators for the starting and running supply for road, railroad, sea and air means of transportation.

Automobile accumulators are well known, being set up in the engine compartment as a rule, where they have to resist external temperatures ranging from -30°C to +90°C.

These high temperature variations, and especially the low temperatures, worsen the starting efficiency.

Since the number of trials to start the automobiles during the freezing season increases, the period of actual exploitation of the accumulator decreases.

The technical problem that this invention solves resides in the thermal insulation and maintenance of constant temperature inside the battery, as constant as possible, through the appropriate construction of the box.

The invention enables the box to fight the disadvantages of slow start, low efficiency and reduced exploitation of the accumulator through its particular construction: the box consists of two frameworks, one being superposed upon the other, between which an inner space forms, which is filled with a thermal-insulating material.

I have put the invention into practice by realizing the accumulator, which turned out to have excellent results.

By applying this invention, the following advantages are obtained:

- the functioning duration of accumulators is lengthened from 3-4 years to 7-9 years;

- a relatively constant temperature of the accumulator is maintained, which protects it against the high temperature differences in both the winter and the summer;

- the accumulators are exploited easily during the frosty weather of the winter;

- the weight of the accumulators is low;

- the environment is protected against the pollutants resulted in the manufacturing process of lead, through the extension of the accumulator functioning period.

Here is an example of realization in connection, and the additional figures representing:

FIG. 1. - Longitudinal section through the framework.

FIG. 2. - Section through the plug.

According to the invention, the box **A** consists of an inner framework **1** made of a known plastic material, resistant to acid, and an outer framework **2** made of the same material plastic or a different one, less resistant to acid **(FIG.1)**.

Between the two frameworks there is a space filled with thermal-insulating foam.

The procedure of filling with thermal-insulating foam is a known one, and it can be carried out either manually, using the doses of polyurethane foam on the market, or industrially, the component **1** and **2** of the box, as well as the components **3** and **4** of the lid **B** have orifices for filling up, and orifices for overflowing, which do not show in the picture.

The lid **B** also consists of two elements, the frameworks **3** and **4**, between which the space **a** is situated, having the same width and containing the same insulating layer of 7–10 mm width.

The lid **B** has a series of holes **b**, in which several plugs **6** are screwed up, and a series of holes **c**, through which the electrodes of the battery come out.

The body **A** has a rigidity **5** in each of the four inferior corners.

The plugs **6** are made of the same plastic material as the one of the inner body **1** of the box **A**.

They are filled with the same thermal-insulating material.

The plugs 6 have each a canal **d** connecting the inside of the battery with the exterior, keeping them at atmospheric pressure, while the canals **d** open into a cavity **e** situated on top of the plug.

The cavity **e** is connected to the atmosphere through an orifice **f** situated eccentrically in comparison with the canal **d** in order to avoid the penetration of dust or other obturating particles.

The accumulator observes DIN, SAE, and EN norms through the modification of the moulds for the grills.

INVENTION SUMMARY
OF THE BOX FOR AUTOMOBILE ACCUMULATORS

The invention is about a box for automobile accumulator batteries that function in the surroundings at extreme temperatures, ranging from -30°C to +90°C. According to this invention, the box consists of two frameworks (1, 2), one superposed upon the other, between which there is a space (a) filled with a thermo-insulating layer made of polyurethane foam. Made up of two plane elements (3, 4), between which the polyurethane foam is introduced, the lid (B) has several holes (b) in which filler caps are screwed up (6). The invention proves useful due to the following advantages: it eliminates the thermal shocks of the automobile accumulators - the thermal shocks of which significantly reduce their safety during exploitation; it eliminates the frequent recharging during the wintertime; it gives easiness of exploitation.

REVENDICATIONS

R1 Box for automobile accumulators characterized by the fact that it is made up of a framework A consisting of two superposed bodies 1 and 2, between which there is a space (a) which is filled up with a thermal-insulating layer made of polyurethane foam, a lid B consisting of two plane elements (3, 4) between which the same foam is introduced and having several holes (b), in which the filler caps 6 are screwed up, and several holes (c) through which the clamps of the accumulator come out, the framework A and the lid B being hermetically attached to one another through thermal fusing.

R2 Filler cap, in concordance with revendication 1, characterized by the fact that it is filled with the same polyurethane foam, offering the space (e) for protection against dust or rough elements that may obturate the canal (d), having an orifice (f) eccentrically situated in comparison with the axis of the canal (d).

Fig. 1

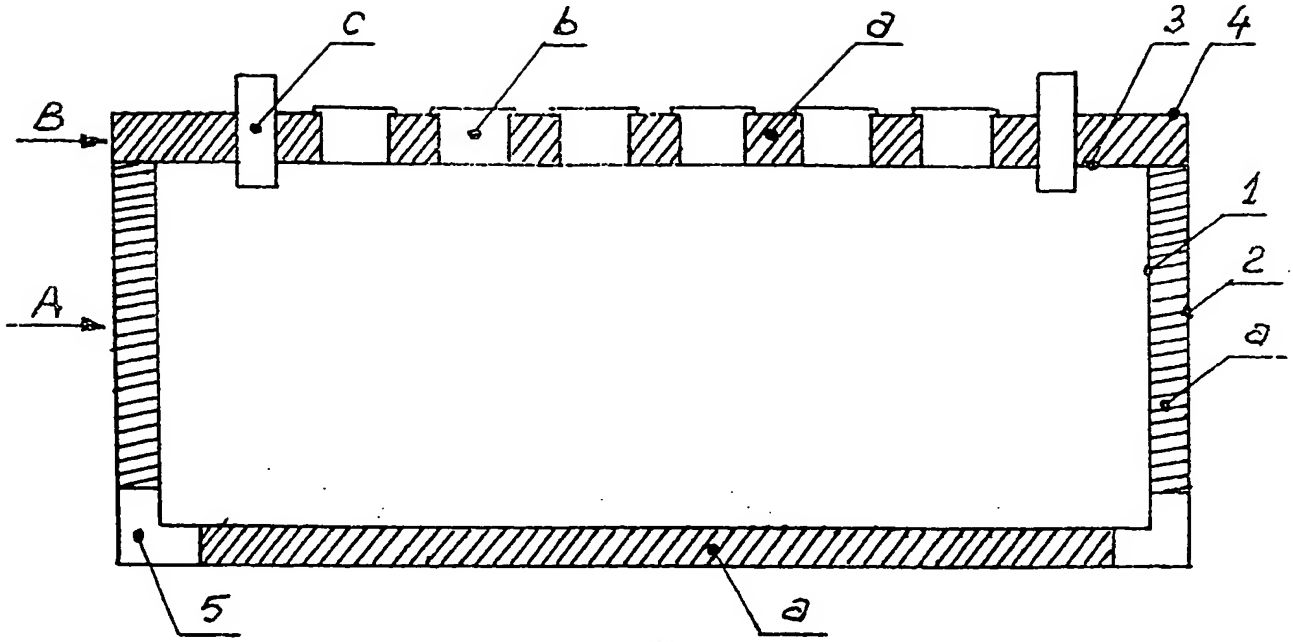
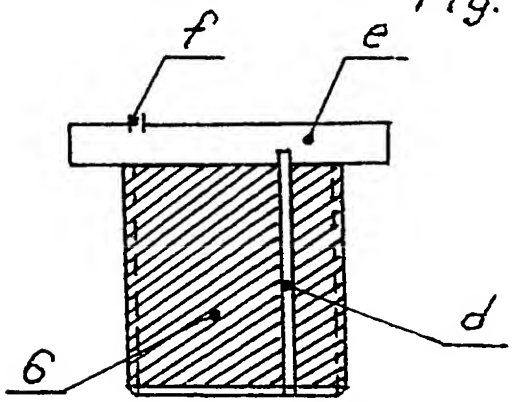


Fig. 2



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(54) Title: BOX FOR AUTOMOBILE ACCUMULATORS

(57) Abstract: The invention is about a box for automobile accumulator batteries that function in the surroundings at extreme temperatures, ranging from -30 °C to +90 °C. According to this invention, the box consists of two frameworks (1, 2), one superposed upon the other, between which there is a space (a) filled with a thermo-insulating layer made of polyurethane foam. Made up of two plane elements (3, 4), between which the polyurethane foam is introduced, the lid (B) has several holes (h) in which filler caps are screwed up (6). The invention proves useful due to the following advantages: it eliminates the thermal shocks of the automobile accumulators - the thermal shocks of which significantly reduce their safety during exploitation; it eliminates the frequent recharging during the wintertime; it gives easiness of exploitation.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01M2/10 H01M2/02 H01M2/12 H01M2/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Information on patent family members

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